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ABSTRACT

This study examined what high-end users (those who use e-mail many times during the day) do with e-mail and how they feel about it. The sample consisted of 12 students and faculty in the Instructional Systems Technology (IST) department at Indiana University. Participants were divided into three groups: faculty, non-first year students, and first year students. Four subjects were chosen to represent each group. Each of the researchers interviewed one member from each group. All subjects reported checking e-mail at least once a day, while most reported checking it 2 to 10 times a day. Subjects generally received 5 to 40 messages a day. Three major categories of usage emerged: personal communication, class-related communication, and collaboration with colleagues. The following conclusions were drawn from this study: (1) there is a problem with a deluge of e-mail; (2) there is a cost and time efficiency benefit to using e-mail; and (3) subjects reported that their feelings about using e-mail have changed over time from viewing it as being fun and exciting to viewing it as strictly a communications medium. (AEF)

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Electronic Mail: An Examination of High-End Users

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Introduction

Over the last ten years, electronic mail (email) has provided a new vehicle for communication. As D'Souza (1992) stated, electronic mail has become a mainstay of organizational communication. Its four essential characteristics, she continues, namely cost reduction, reduced paper handling, faster communications, and improved communication effectiveness, have attracted users both from businesses and academia.

At Indiana University alone, there are over 40,000 active accounts. These include student, faculty, and staff accounts. It is estimated that over 80% of these accounts are active, and 99% of them are used for electronic mail. Mark Sheehan of University Computing Services at Indiana University mentioned that email has been in common use among students only since 1988 when there were only 8,000 computer accounts issued.

From reviewing the literature on electronic mail, we found that researchers have not made a distinction between users who use electronic mail many times during the day (high-end users), and casual users (low-end users). Therefore, research findings on how people use and feel about electronic mail have been reported without considering whether the amount of usage is a factor in the participants responses.

Therefore, for this paper, the scope has been narrowed to high-end users. The researchers set out to discover what high-end users (students and faculty only) do with email and how they feel about it. It is our hope that in the future similar studies will be conducted with low-end users, in order to be able to compare and contrast studies.

Literature Review

There is a respectable volume of research that is devoted to the use of email in academic settings. Poling (1992) encourages students and professors to use electronic mail to their advantage for classroom purposes. He firmly believes that educators can build a stronger relationship with students by simply spending a few minutes each day using email to communicate with their students. Moreover, many other researchers, including D'Souza (1992), Ruberg and Miller (1993), and Lowry, Koneman, Osman-Jouchoux, and Wilson (1994), suggest that students and faculty use electronic mail for all of the following: answering direct questions from any student, counseling, class assignments, general class announcements, occasional quizzes, direct communication with a particular student, posting grades, helpful hints about homework or upcoming quizzes or tests, and excuses for missing class.

Nevertheless as Ruberg and Miller (1993) stated, direct communications such as electronic mail may resolve some communication problems, but it may also introduce some others. For example, the physical aspects/personalization of communication such as face-to-face interactions and hard copy formats are lost, and some users of email complain about information overload preventing them from managing all the email they receive.

Design of Study

Sample

Our sample consisted of 12 people in the Instructional Systems Technology (IST) department at Indiana University. We chose IST faculty and students because we recognized that they represent a unique population. First, the students in IST are required to pass a computer proficiency which includes email. Second, the faculty and students depend on email as the sole medium for posting job announcements, class announcements and community events. Third, IST as somewhat unique because of the high-end use of computers. Each of our subjects checked their email daily. Fourth, members of the IST community represent a large number of students from different backgrounds. Not only are there students from around the world, but also from many disciplines. Finally, the fact that IST is a graduate-only program makes it unique.

We divided the IST department into three major groups, the faculty (F1-F4), non-first year students (S1-S4), and first year students (S5-S8) and chose four subjects to represent each group, F1-F4 and S1-S8. Within this sample, we tried to mirror the diversity of IST. Overall, we had five females and seven males. Nine of our subjects were American, the other three were international students.

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The choice to split up the students into non-first year and first year was based on the assumption that length of experience with email may influence opinion. Many of the first year students may be newer to the technology than the established students. The faculty were chosen because their point of view is relevant to the way IST uses email, yet potentially differs from the ideas of the students.

Procedure

The four researchers each interviewed one member from each of our major subject groups. Each interview was audio taped. We asked our respondents how often they send and receive email, how they use it, and how they feel about email. The researchers then transcribed the interviews and returned them to each respondent for a member check.

Once the member checks were completed, the researchers broke the transcriptions into idea units and placed them on note cards. The question that was being answered in each case was also put on each notecard to ensure that the information was not being taken out of context. Finally, the notecards were grouped and sorted into categories. From there, the analysis took place.

Findings

Frequency of Use

All of the subjects reported checking email at least once a day. Most of them report checking it two to ten times a day. Two of the faculty members keep email open all the time. This means that they are, in essence, checking their email constantly.

The subjects report receiving generally five to forty email messages each day. However, they only claim to send two to ten messages each day. Several of the respondents mentioned that a lot of the email they receive is from listservs they are subscribed to. This helps explain the discrepancy between the number of messages sent and the number of messages received.

Purpose of Use

When the data was analyzed, three major categories of usage emerged. Our subjects generally use email for personal communication, class related communication and collaboration with colleagues.

Personal

In the area of personal use, email proves to be a cheaper means of communication than long distance phone calls and is more likely to be written and sent than a letter. Several of the subjects acknowledge that it is email that allows them to keep in touch with people who would have fallen out of their lives. As one person pointed out, "I never would have had any track of them (friends from high school) at all." (F1) Another person also says that email helps her keep in touch with "a person you like, but they are not intimate enough to spend long distance money on." (S3)

In a related use, one international student mentioned that while she was adjusting to life in Indiana, email become her connection with her home:

> When I first came here, I was using it a lot to send messages to my friends in Taiwan. In the beginning, when I came here, I was feeling very lonely so I was using it to talk to my friends a lot, but now I feel comfortable here, so I don't use it as much as before. (S7)

In personal communications, besides the economic benefit, there are two other benefits to email that were stated by our subjects. First, the ability to send it to many people at once. This allows for easier handling of logistics such as planning group meetings. Next, the subjects mentioned the ability to use listservs. One faculty member stated:

> From what I've seen, most listservs tends to have one or two people on them that know what they're talking about, and hundreds and hundreds of people who don't -- who are either asking questions, or

> they are getting on there and they are sort of yammering the same platitudes, truisms that they read in *Newsweek* last week. (F1)

But, she continued that she benefits from this kind of communication with people who have similar interests.

Class Use

Both our faculty and student respondents applaud email for class uses. The students report that it is a wonderful way to organize group and project activities and meetings. They also like using email to communicate with professors. One student stated

> I would be less inclined to go and talk to a professor. I would be more likely, I mean definitely more likely, to send them an email than to call them. I would probably never call a professor, but I would probably go into their office before I would call them. But, sending an email is no big deal. (S6)

The students also use email to continue class discussions, thereby extending learning beyond the walls of the classroom. Finally, a few students mentioned that they sometime submit assignments via email.

Like the students, the professors like email's effect on class communications. They mentioned the convenience of sending out class information over email instead of trying to find a different way to communicate with the students. They are also able to answer the student's questions both quickly and at their own convenience. As one professor mentioned:

> Where formerly a student may have made an appointment or I would have felt compelled to have office hours where I sit in the office and stare at the door and make sure I don't do anything else because that's the only time students can get at me. Now I know students who have questions can ask them 24 hours a day and I can answer them, sometimes in the middle of the night or . . . on weekends.(F3)

The professors, like the students, also mentioned the expansion of learning time past the one to three hours reserved for classes.

Collaboration

Finally, both students and faculty cited collaboration as a major use of email. They use email to consult with other professionals and students, make initial contacts with people who they would like to collaborate with, organize projects, and maintain contact with colleagues. Perhaps the best summary of the strength of email for these kinds of activities comes from one professor who said, "(email is) especially nice, for instance, in the case of [a colleague] in Venezuela. There's hardly any other way to talk to Venezuela. The phone system doesn't work well - the mail doesn't work at all." (F3) He goes on to state that because of email, this colleague is able to serve on an IST student's dissertation committee.

Feelings About Use

Once the data was interpreted and separated, there appeared to be five distinct categories that people's feelings about email use fit into. On the positive side, they claimed they like email because it is unobtrusive and convenient and efficient. The negative feelings included email being overwhelming, it is problematic to communicate feelings via email and email is not useful for complex issues.

All of our subject mentioned the convenience of using email. They really enjoy the freedom of being able to ask questions whenever they want, and being able to answer questions at their leisure. Because email is unobtrusive, no one hesitates to end an email if they need to communicate with a colleague or student/professor. As one student (S3) stated, "I think that I like email because it's unobtrusive -- because when somebody's checking their email, they are choosing to check it and they can determine what they want to do with the message." This same student reemphasized her point by stating that "it's (email) is different than calling someone on the phone, because a person can't control when they are going to get a phone call, but you can control when you check your email, and how you want to deal with it." This feature of email makes it a very convenient communication device.

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The efficiency of email makes it highly appreciated. Email allows the sender more time to formulate questions and be sure the question being asked is the intended question. It also provides a means for people to get answers faster than they would if they had to reach a person by telephone or personally. As one professor pointed out, "I think that's a neglected attribute of email – that it can answer problems more quickly than you might otherwise do face-to-face." (F3)

The major complaint about email that our subjects offered is that they receive too much of it. They mainly blame listservs for the bulk of their email. As one faculty member summed up the situation:

> The whole backside of email is managing the incoming and outgoing messages . . . that's a whole other world of use and a troublesome one . . . it's a huge clerical job that lands on your desk all of a sudden, and I don't really know to what extent we fall backwards into our picture of how people spend their work time, but it's there. (F1)

Communication of feelings is another area in which email falls short. As a faculty member pointed out, "We've all had bad experiences or misunderstandings, hurt feelings over something that someone typed and it didn't come across right to the other person."(F1) Several of the students also found this to be a problem.

Finally, our subjects felt that email is not appropriate for complex issues. One student summarized this point of view by stating, "There are certain sorts of chit-chatty things you just can't type at all." (S3)

Conclusions

There are several conclusions that can be drawn from this research. First, there is a problem with a deluge of email. Unlike D'Souza, we found that email is an additional form of communication. It has not replaced any other forms, merely provided a new form. In fact, as Ruber and Miller pointed out, email has caused some new communications problems. For instance, several of our subjects mentioned that it has caused a redundancy in communication. For instance, they receive a phone call telling them to check their email which contains a letter which has also been faxed to them. This is not an effective use of the technology and does not improve the effectiveness of their communication.

Next, there is definitely a cost and time efficiency benefit to using email. Our data matched D'Souza's findings – email provides faster communications. It also allows the sender and receiver the freedom to deal with their questions at their own convenience instead of having to coordinate with other people to meet them face-to-face.

Finally, we noted that our subjects report that their feelings about using email have changed over time. Each of them reported being very excited about using it at first. They sent messages to everyone they knew who had email because it was fun and exciting. After even a few months of using email, they view it merely as a communication medium. They feel it is something that needs to be dealt with daily. While they are not unhappy about having email, our subjects are not excited by it anymore either.

Future Research

This report focuses only on a very narrow group of email users. In the future, research should be done to find out how other groups of people feel about email. It would be interesting to compare high-end users to low-end users not only int he ways they use the medium, but also how they feel about the medium. Another area of research would be to compare use of email to that of other communication mediums – especially looking at the frequency of use and types of use for each.

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